3.15 Social and Economic Resources

The socioeconomic Study Area surrounding the proposed Quitchupah Creek Road consists of Carbon, Emery, and Sevier Counties in central Utah. Carbon and Emery Counties are closely tied economically, while Sevier County's economy is more removed from the economy of the other two counties. This section describes relevant socioeconomic elements of the Study Area and sets the stage for the socioeconomic impact analysis.

Quitchupah Creek Area
This area is characterized as a quiet, undeveloped steep canyon area lying east of the SUFCO mine, opening to SR-10 in Emery County. The area around the upper reaches of the creek is administered by the Forest Service and the BLM; the lower area is privately owned. The Quitchupah Creek area currently has an unimproved two track road throughout its length. At the present time the primary socioeconomic uses of the Quitchupah Creek area are public (Forest Service and BLM) and private grazing, dispersed recreation (including hunting and sightseeing), and irrigated pasture activity in the lower reaches. ATV activity occurs in the canyon although this area is not currently regulated as an official ATV use area by either the Forest Service or BLM.

Utah Coal Industry
The 13 Utah underground coal mines combined produced 19.7 million metric tons (mt) (21.7 million short tons (st)) of coal in 2004, 6.5 % less than in 2003 (Utah Energy Office 2004). All of the mines and facilities are located in east-central Utah. The underground mines in the Wasatch and Book Cliffs coal fields, located mostly in Carbon and Emery Counties, produce almost all of the coal which is marketed throughout the west. The largest coal producer in 2004 was the SUFCO Mine, which produced a near-record high of 6.87 million mt.

The Utah coal mining industry has a direct, significant impact on local economies where mining occurs. In 2004, mining companies respectively employed 706, 701, and 399 persons in Carbon, Emery, and Sevier Counties (OSM 2005). In Sevier County, Canyon Fuel Company was the third largest employer.

According to the 2004 Summary of Mineral Activity in Utah (Bon and Krahulec, 2004): "Over half of Utah's coal was consumed in-state by three electric utilities in 2004. Coal was also used for industrial purposes within the state and shipped to electric utilities and industrial users in other states. The export market to Pacific Rim countries, which had accounted for up to 5.0 million mt of production in 1996, dwindled to less than 0.45 million mt in 2002, and to none in 2003 and 2004, mainly due to foreign competition. No overseas coal exports are anticipated in the next several years."

Federal Coal Royalty Payments in the Study Area
Mining companies extracting coal from Federal coal deposits pay a royalty to the Federal government (**Table 3.15-1**). The coal mining companies in Utah pay approximately $33 million annually in royalties. In 1999, coal royalties represented 53 percent of Federal mineral lease payments in Utah. Fifty percent of Federal mineral lease payments are returned to the state of origin. States have full discretion as to distribution of mineral lease payments, as long as priority is given to areas with social and/or economic impacts as a result of mineral lease activity.

Table 3.15-1 Utah Coal Production and Royalties on Federal Lands

Description	1998	1999	2000	2001
Carbon County, Utah				
Sales Volume (tons)	2,890,078	4,735,288	5,016,679	3,084,196
Royalties ($)	8,958,849	6,069,579	6,177,243	4,211,025
Disbursed to State ($)	4,479,425	3,034,789	3,088,621	2,105,513
Emery County, Utah				
Sales Volume (tons)	6,225,733	14,223,543	11,672,643	10,522,326
Royalties ($)	17,603,597	19,011,504	14,199,103	12,876,284
Disbursed to State ($)	8,801,799	9,505,752	7,099,551	6,438,142
Sevier County, Utah				
Sales Volume (tons)	2,566,422	6,014,967	5,632,331	7,268,525
Royalties ($)	7,356,402	8,407,485	9,314,751	12,238,148
Disbursed to State ($)	3,678,201	4,203,742	4,657,375	6,119,074

Source: Federal Mineral Revenue Disbursements by State and County, Minerals Management Service, Fiscal Years as indicated.

SUFCO Mine

Coal production at the SUFCO Mine was 7.1 million tons in 2003, 27 percent of the total coal production in Utah. In 2004, SUFCO was the largest coal producer in Utah, with a near-record high of 6.87 million mt. SUFCO Mine intends to increase annual production at the SUFCO Mine to a maximum of 8.5 million tons, market conditions allowing. The SUFCO Mine is an industry leader in efficiency, producing coal at the rate of nearly 100 tons per man-shift compared to the industry average of 55 tons per man shift (SUFCO Mine Information and Data Book, 2001 Coal Report). The efficiency of production helps offset the high transport costs due to the distance from loadouts and consumers, and has kept the SUFCO Mine competitive with the other major coal mines in Carbon and Emery Counties.

At an average annual production of 26 million tons the Utah coal industry has revenues of $450 million plus. The revenues at the SUFCO Mine, based on 7.1 million tons, in 2002 were about $124 million. The recently acquired Muddy tract is expected to increase SUFCO Mine life by 11 years at the current production rate (Utah Energy Office, 2004).

The SUFCO Mine relies on truck transport for all of its coal shipments because it is located far from railheads and loadouts. Coal is either transported west 82 miles to the Levan Loadout or east 62 miles to Hunter Power Plant or east 83 miles to the Savage Loadout. To overcome the disadvantage of distance the SUFCO Mine operates very efficiently, to produce high BTU, low sulfur coal needed by the electrical power producing plants to derive the greatest amount of power per ton of coal yet satisfy the requirements of air quality permits.

To comprehend the burden of truck transport of coal, the SUFCO Mine and Sevier County are investing a lot of effort planning and permitting a railroad from Levan to Salina to reduce the westward coal truck transport distance by about 53 miles.

SUFCO Mine Employment

The SUFCO Mine is located in Sevier County ten miles west of Emery. Mine employment in 2002 was 290. That employee count, by county of residence, is shown in **Table 3.15-2** for the years 1999 through 2002. Mine employment in 2003 was 281.

Table 3.15-2 SUFCO Mine Employment by County of Residence

County	End of Year 1999		End of Year 2000		End of Year 2001		End of Year 2002	
	Number	Proportion	Number	Proportion	Number	Proportion	Number	Proportion
Sevier	158	67.5%	163	64.7%	163	59.1%	164	56.5%
Sanpete	68	29.1%	72	28.6%	72	26.1%	84	29.0%
Emery	0	0.0%	8	3.2%	27	9.8%	27	9.3%
Juab	7	3.0%	7	2.8%	7	2.5%	8	2.7%
Carbon	0	0.0%	0	0.0%	4	1.4%	5	1.7%
Millard	1	0.4%	1	0.4%	1	0.4%	1	0.3%
Uintah	0	0.0%	0	0.0%	1	0.4%	0	0.0%
Wayne	0	0.0%	1	0.4%	1	0.4%	1	0.3%
Totals	234		252		276		290	

Source: SUFCO Coal Mine (April, 2003)

As this table shows, employment in Sevier County held fairly steady during the period 1998-2002 while, at the same time, total employment increased. This led to a drop in the proportion of mine employees residing in Sevier County. However, during this same time period the number of employees residing in Emery County increased from 0 to 27. This raised Emery County from one of the three lowest counties to the third highest in terms of SUFCO mine employment. Employment at the SUFCO Mine in both Carbon and Sanpete Counties increased in 2002.

SUFCO Mine is the largest single coal producer in Utah, and supplies coal to major power plants in Utah, Nevada, California, and Midwest. Other markets include cement, lime, and gypsum plants, other industrial users, governmental, and residential users in the West. As stated previously, SUFCO Mine is an industry leader in efficiency, producing coal at the rate of nearly 100 tons per man-shift compared to the industry average in Utah of 50 tons per man-shift (SUFCO Mine Information and Data Book). The coal itself is unique and valued because of its low ash and sulfur content; this coal is utilized by electrical power generating plants in a mix with lower quality coal to reduce emissions of environmentally hazardous materials and maintain compliance with air quality permit requirements.

The SUFCO Mine as a coal mine has a "direct effect employment multiplier" of 5.5 (Utah State and Local Government Fiscal Impact Model working Paper Series: 2001-1 Multipliers for Utah; Prepared by: Governor's Office of Planning and Budget Demographic and Economic Analysis Section). This means the SUFCO Mine employment alone contributes some 1,600 jobs (290 x 5.5, which includes the jobs at the mine). For every person employed at SUFCO Mine, 4.5 additional jobs (1,273 jobs) are created. Many of the additional workers (about 204) are employed to transport the coal to end users.

The SUFCO Mine will most likely expand to the 8.0 to 8.5 million tons per year level over the next 10 years; at that production level, employment is expected to increase to about 310 employees (Wes Sorensen, SUFCO mine).

Since the Hunter Power Plant is a major market for the SUFCO Mine, competition from other mines nearer to the plant could adversely affect the market for coal mined at the SUFCO Mine. The coal production in Utah is steady because there is a limited regional market that determines the level of production. To enter this market, a new mine or increased production from an existing mine must replace an existing producer. Within 20-30 miles of the Hunter and Huntington power plants, there is one new mine and two large coal reserves scheduled for development and production. If these new mines were to match the efficiency of the SUFCO Mine, they would have a competitive advantage based on transport costs. The savings on transport costs for a mine at 30 miles one-way distance over the current SUFCO transport of 62 miles one-way would be $2.24 per ton or about 13 percent of market value which was $17.54 per ton in 2001; for a mine at 20 miles one-way distance the savings would be $2.94 per ton or 17 percent of market value.

In comparison, the SUFCO Mine transport cost of $1.85 per ton due to the shorter distance on the Quitchupah Creek Road would reduce the transport cost differential to $0.39 per ton for 30 miles and $1.09 for 20 miles. This would allow the SUFCO Mine to remain competitive with the newer mines and maintain its share of the market. According to statements made at the Utah Coal Conference in 2001 the market for Utah coal in the future is a "well defined market with marginal growth".

Land Ownership

The counties of Sevier, Carbon, and Emery are contiguous, with Carbon County being immediately north of Emery County, and Sevier County being immediately west of the southern half of Emery County. None of the counties are considered part of a Metropolitan Statistical Area. Government is a significant landowner in each of the three counties (**Table 3.15-3**).

Table 3.15-3 Land Ownership

Description	Carbon County, UT	Emery County, UT	Sevier County, UT
Acres	947,632	2,850,356	1,222,107
Federal	47.5%	79.8%	76.0%
State	13.1%	11.8%	4.9%
Private/Local Government	39.4%	8.4%	19.1%

Source: Federal Land Payments in Utah, Governor's Office of Planning and Budget

Population

Sevier County is the most populous of the three counties, with a 2004 estimated population of 19,415, followed by Carbon County with an estimated 2004 population of 19,385. Emery County had a 2004 estimated population of 10,493. Over the past twenty years, the populations of Carbon and Emery Counties have decreased slightly while Sevier County's population has grown by 1.4 percent annually.

Population projections through the year 2030 indicate an expected average increase of 0.8 percent per year in the three counties (**Table 3.15-4**). The three communities on the transport route from the SUFCO Mine to the Hunter Power Plant (Clawson, Emery, and Ferron) are projected to have a combined average annual increase in population of 0.7 percent between now and 2030. Castle

Dale, Clawson, Emery, Ferron, Huntington, Price, and the other municipalities directly impacted by the transport of coal from the SUFCO Mine to railroad loadouts near Price, are projected to collectively increase in population by 0.7 percent annually until 2030.

Table 3.15-4 Population Projections

	2005	2010	2020	2030
Castle Dale City	1,753	1,829	2,005	2,113
Clawson Town	164	171	187	197
Emery Town	299	312	342	360
Ferron City	1,669	1,742	1,910	2,012
Huntington City	2,014	2,102	2,304	2,428
Price City	9,670	10,151	10,842	11,481
Carbon County	22,951	24,091	25,732	27,248
Emery County	10,772	11,243	12,322	12,984
Sevier County	20,635	22,155	24,598	26,498
Tri-County Area (Carbon/Emery/Sevier)	54,358	57,489	62,652	66,730

Source: Governor's Office of Planning and Budget

Study Area Employment and Income

Approximately 11.1 percent of the total nonagricultural employment (1,842 jobs) in the tri-county area is due to mining according to 2001/2002 detailed data (Utah Department of Workforce Services, 1999). Trade, transportation, and utilities accounted for 25.9% of the total nonagricultural employment (5,067 jobs) and government accounted for 24.7% (4860 jobs). Mining accounted for 19.2 percent of total nonagricultural wages in the three counties in 2002, while trade transportation and utilities accounted for 28.7% and government employment accounted for 22.8%. Each of these three industries pays higher than average wages.

Unemployment in Carbon and Emery Counties tends to be higher than that in Sevier County. From 1990-2003, unemployment in Carbon County was in the range of 5.9 percent to 7.8 percent, while unemployment in Emery County was between 6.5 percent and 11 percent. Unemployment in Sevier County declined from 4.8 percent in 1994 to 3.9 percent in 2000, and then rose to 5.4 percent in 2003.

Nonagricultural employment in Sevier County rose steadily from 4,616 in 1980 to 7,311 in 2002, an average annual increase of 2.2 percent, then dropped off to 7,160 in 2003. Nonagricultural employment in Carbon County rose from 8,523 in 1980 to 8,918 in 2002, then dropped to 8,602 in 2003. In 2003, mining accounted for 8.6 percent of the nonagricultural employment in Carbon County. Nonagricultural employment in Emery County was 4,501 in 1980, and declined to 3,498 in 2003. In 2003, mining was the second largest industrial sector (in terms of employment) with 648 employees or 18.5 percent of total employment in Emery County. Transportation and public utilities, which includes the Hunter and Huntington Power Plants, were estimated to have approximately 902 employees, 25.8 percent of 2003 total employment in Emery County.

Emery County has the highest average monthly wage of the subject counties. From 1980 to 1998, Emery County's average monthly nonagricultural wage increased at an annual rate of 2.9 percent. The average monthly wage in Carbon County and Sevier County increased at 3.1 percent and 3.2 percent, respectively. From 1998 to 2003, mean rates of increase were smaller, as the average monthly wage in Emery, Carbon, and Sevier County increased at rates of 1.4, 2.2, and 2.8

percent, respectively.

Although Emery County had the highest average monthly wage in 2003 ($2,831 vs. $2,551 for state), Carbon County had the highest per capita personal income of the three counties. Per capita personal income in Carbon County was $23,365 in 2002, as compared to $18,776 in Emery County, and $18,828 in Sevier County. Per capita income for the state in 2002 was an average of $24,639, for the nation it was $30,906.

The three counties vary widely in median household income. Emery County had the highest median household income in 2002 ($40,759), followed by Sevier County ($36,721), and Carbon County ($36,132). Emery County has the smallest number of households in the three lowest income brackets as well as the highest number in the three upper income brackets, according to 2003 federal tax return data.

In one year, 2002, direct wages at SUFCO Mine totaled $32.9 million. The jobs created on the foundation of mine employment added another $30.0 million in wages, for a total of $62.9 million of wages tied to the mine.

Agriculture

Agriculture plays a role in the economy of each of the three counties. Sevier County produced over $39 million worth of agricultural products in 1997, while Carbon County produced $3.6 million, and Emery County $11 million. The value of production is dominated by livestock in each of the three counties, with cattle being the product with the highest total value in each of the counties.

Sevier County

Sevier County is a mostly rural county in central Utah. Recently Sevier County has been in economic limbo with jobs growing at a rate of 0 to 1.25 percent annually. In 2004, the unemployment rate of 4.9 percent was just above the state average of 4.8 percent and below the national average of 5.5 percent. The population has grown slowly at a rate of 0.3 to 2.2 percent annually, below the state average of 2.4 percent (County Trends December 2004, Sevier).

Among the list of the largest employers in Sevier County, Barney Trucking is #2 and SUFCO Mine is #3 (Utah Department of Workforce Services, 2002). Both of these companies derive their income from the sale and transport of coal.

The SUFCO Mine and dependant trucking companies pay about 28 percent of the property taxes in Sevier County. In 2002, SUFCO Mine purchased $64.6 million in goods and services, much of this from Sevier and Carbon Counties. Sevier County has received over $1.0 million from the Federal coal royalties paid by SUFCO Mine.

Emery County

Emery County's economy steadily increased in 2003 and 2004. The increase in nonfarm jobs was 4.7 percent from 2003 to 2004 (Department of Workforce Services). The current unemployment rate is 8.7 percent, while the Utah rate for unemployment is 4.8 percent and the national rate 5.5 percent (County Trends December 2004, Emery).

The mining industry has lost 24 jobs or 3.6 percent of the total employment in mining between 2003 and 2004, as the last figures available. The utilities industries have gained 19 jobs in the same period. The trucking industry lost a few jobs in 2004 (Utah Department of Workforce Services).

Carbon County
Carbon County in the last decade had one of the slowest population growth rates of any county in Utah. The county population declined 1.5 percent in 2003. The economy is based on coal mining, utilities, transportation, and government. Coal mining and associated mining services had seen a decline in jobs until 2002, when mining added 180 jobs (County Trends, Dec. 2002), but mining again lost jobs (50) from 2003 to 2004. Carbon County is the center of mining services for the coal industry in Utah, and Joy Technologies, Inc., a mining service company, is named seventh on the list of largest employers in the county (Utah Department of Workforce Services).

According to 2003 figures, the average monthly wage in Carbon County is only 90% of the average wage for Utah, and the county is listed as tenth in the state for average monthly wage. Within Carbon County, mining is the leader in average monthly wage. Unemployment rates in Carbon County have consistently been higher than the state rate (Utah Department of Workforce Services).

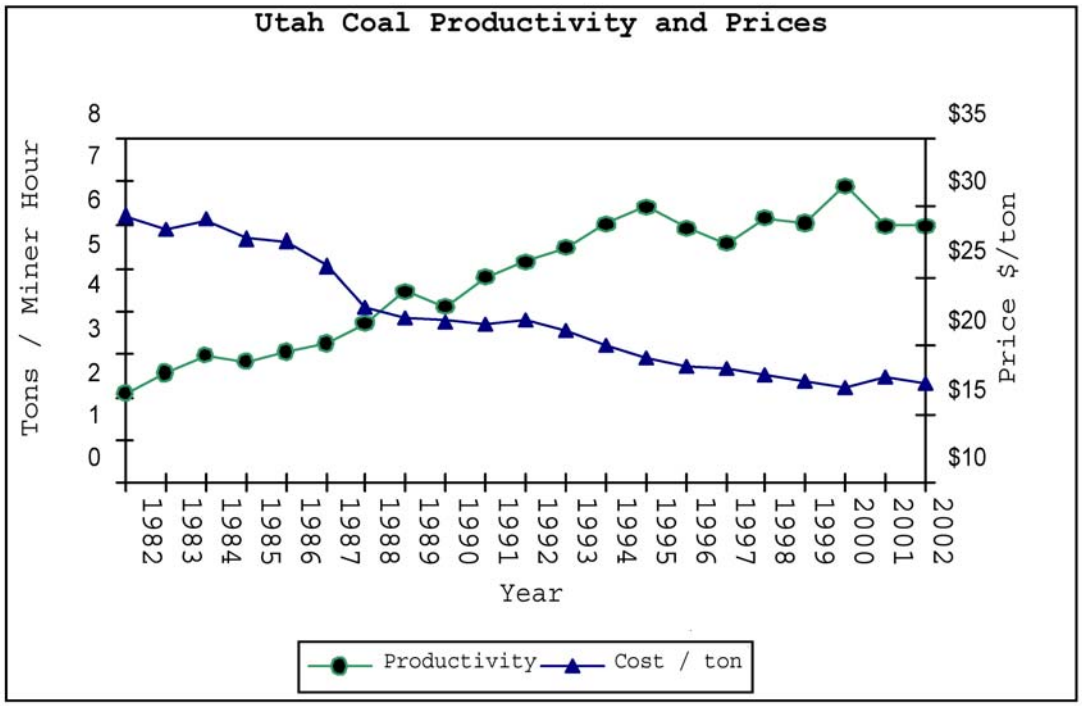
Transportation Costs
Region 4 of the UDOT estimates that for normal existing traffic volume on I-70 for the 17 miles between Exit 72 and Exit 89 they spent $500,000 in 2001 for surface seal and $50,000 in 2004 for surface rejuvenation. A major rehabilitation of this section of I-70 is scheduled for 2006 and will cost between $10 and $13 million. I-70, although 28 years old, is in good condition and is expected to be able to handle forecasted increases in traffic volume without additional routine maintenance costs. A typical schedule for this interstate highway includes surface rejuvenation at three year intervals, alternating with surface seal at six year intervals, structural overlays at 15 year intervals, and new pavement structure at 48 years.

Region 4 of UDOT estimates that for normal existing traffic volume on SR-10 from the Fremont Junction (I-70 Exit 79) to south of the town of Emery, they will spend $200,000 for a chip seal coat in 2005 and $20,000 in 2008 for surface rejuvenation under the existing traffic regime. SR-10 is an old narrow road built on poor soil materials, follows the contour of the land in hilly terrain, and has weak to medium strength pavement structure. Under existing traffic the years to fatigue average nine, with four years being the worst-case scenario (Scott Goodwin, Region 4, UDOT, 2001).

Potential Impacts To Social and Economic Resources

The SUFCO Mine operates in a very competitive energy market. As shown in the graph below, the increase in productivity in Utah coal mining has led to lower coal prices. These lower coal prices have provided for more reasonable electrical energy prices for the public.

Reviewing the financial performance (and stock prices) of coal companies shows the increased productivity has not added significantly to corporate margins or bottom-line profitability. The Skyline Mine, owned by the same parent company as SUFCO, closed temporarily in 2004 due to low prices.



Data from page 2 of the *2001 Annual Review and Forecast of UTAH COAL Production and Distribution, January 2003*, by the Utah Geological Survey and Utah Energy Office of the Department of Natural Resources (2002 projected).

Similar results would be expected for the Quitchupah Creek Road Project coal transportation cost savings. Although there would be some initial increased profitability for the mining company, the competitive nature of the market should again ensure that the added profit margin would be reduced to historic or prevailing levels. The fuel savings would then pass to the generating station and historically then to the consuming public due to the regulated or open market nature of electrical power generation.

In addition, the decreased transportation cost would allow the SUFCO Mine to recover more of the coal resource and increase the overall recovery. SUFCO Mine personnel have projected up to 11 million additional tons of coal could be recovered if the Quitchupah Creek Road were built, adding some 1.3 years to the life of the mine. These 11 million tons could provide for the electrical needs of some 1.7 million average residential customers for the 1.3 years. This is an energy resource that would otherwise be lost because it would be uneconomic to recover.

Production levels that are predetermined by in-place contracts are expected to occur under the No Action alternative (Alternative A) as well as with the build alternatives (Alternatives B, C, D). Consequently, employment and payroll at the SUFCO mine would not change as a direct result of any of the alternatives. However, employment and payroll could change in the future to accommodate production fluctuations associated with the Pacificorp contract and to accommodate any additional SUFCO contracts that are either signed or canceled. It is expected that SUFCO employment would increase from the current level of 290 to approximately 310 over the next several years once the mine reaches its maximum production of 8.5 million tons per year.

There would be no differences attributable to any of the alternatives in terms of the Study Area's:

- population growth estimates,
- land ownership (Federal, state, private),
- agricultural production,
- Federal coal royalty payments to counties.

Additionally, there will be an increase in noise, truck traffic, and probability of accidents through the communities of Emery, Ferron, Huntington, Clawson, and Castle Dale on SR-10 due to the delivery of coal to Hunter Power Plant.

The value of the Quitchupah Creek Road to the SUFCO Mine is measured in the reduction in trip costs and the reduced effort to transport coal. The round trip from the SUFCO Mine to the Hunter Generating Power Plant would be reduced by an average of about 50 miles (43 percent), depending on the build alternative. The cost to transport one ton of coal on the round trip to Hunter was 25 percent of the market value of the one ton of coal in 2001. The 43 percent reduction in mileage would save 11 percent of the market value of a ton of coal, thus potentially increasing profits. The 11 percent savings for an annual transport of 4.1 mmtpy means a considerable cost advantage for the coal producer, allowing the SUFCO Mine to remain competitive in the coal markets to the East.

The segment of I-70 on which SUFCO coal trucks now transport to the east is structurally sound and capable of handling expected increases in truck traffic without any additional maintenance costs. Therefore, there are no differences expected in I-70 maintenance costs regardless of whether SUFCO trucks operate on this segment of the highway (i.e. No Action alternative) or not (i.e. Alternatives B, C, D) (Scott Goodwin, UDOT, Region 4, 2001).

SR-10 is in need of improvements to handle existing and future coal truck traffic between I-70 and Price, including pavement overlays, bridge construction, and improvements in curves and passing lanes. These improvements include a number of projects already scheduled to be completed within the next few years along the full length of SR-10, projects that are needed regardless of the alternative chosen, and would cost approximately $30,000,000 (Scott Goodwin, UDOT, 2001). In order to accurately compare the costs among alternatives associated with upgrading SR-10, it is necessary to focus on the segment of road, and associated costs, that would experience differences attributable to the four alternatives. This means looking at the first 10.1 miles of SR-10 which would take the analysis to the northernmost junction of the proposed road, the Alternative C junction. Any impacts occurring to the north of that point would be common to all alternatives. With this in mind, the proposed route down Quitchupah Creek would result in eliminating SUFCO coal truck traffic on the segment of SR-10 between I-70 and the proposed SR-10 intersections. See **Figures 1-2** and **1-3** for the location of the three possible intersections with SR-10 associated with Alternatives B/C/D. By eliminating coal truck traffic on this segment of SR-10 south of these proposed intersection locations, there would be savings on SR-10 under alternatives B, C, and D as compared to the No Action alternative. These savings are discussed below under the respective impact sections. There would be no significant difference among any of the four alternatives in routine maintenance costs (e.g. chip seal, surface rejuvenation) on the first 10.1 miles of SR-10.

Figures 2-3, **2-7**, and **2-11** show the junctions with SR-10 by Alternative. The Alternative B junction with SR-10 (**Figure 2-3**) would require the widening of the existing bridge in order for it to meet standards and carry the needed turn lanes. The new bridge would be approximately double the width that it is currently. Alternatives C and D junctions with SR-10 (**Figures 2-7** and **2-11**) would not require the widening of the bridge spanning Quitchupah Creek, nor would either

require the long acceleration lane since they are in areas of low grade. The costs for construction of these improvements would be the responsibility of the SSD rather than UDOT (See **Table 2.7-1**).

NO ACTION - ALTERNATIVE A

Under this alternative, coal would continue to be transported to the east under the current transportation route. This route leaves the SUFCO Mine via the Acord Lakes Road, heads east on I-70, and then north on SR-10 to the Hunter Power Plant and to the rail loadout near Price, Utah (**Figure 1-3**).

The solitude and overall character of Quitchupah Creek canyon would not change under this alternative.

Fuel savings for the SUFCO mine would not occur under this alternative because there would not be a reduction in the round-trip mileage as compared to Alternatives B, C, and D (see those sections below for a discussion of SUFCO fuel savings, by alternative).

Ranching use in the Quitchupah Creek canyon would continue as is, with no changes to ranching operations.

Under this alternative the commuting distance from communities to the east of the SUFCO Mine would not decrease for vendors traveling to the mine or for the Carbon and Emery County residents employed at the mine.

Table 3.15-5 Annual Estimated Fuel Consumption Under Alternative A

Coal Transported per Year		Number of Truck Trips	
Year	**Tons**	**Number of Trips**	**Consumed Fuel Gallons**
2001	2,000,000	52,632	1,450,304
2002	3,000,000	78,947	2,175,428
2003 or max	5,500,000	144,737	3,988,308
Assumptions: 38 tons of coal per haul, 4.5 miles per gallon.			

The distance from the SUFCO Mine to Salina, in Sevier County, is approximately 30 road miles. The road mile distance from the SUFCO Mine to the town of Emery (population 289) is currently 39.8 miles, and 53.6 miles to Ferron (population 1,611). No savings to fuel consumption and coal transport costs, up to $10M annually, would occur under the No Action Alternative resulting in no competitive advantage to the SUFCO Mine.

Under the No Action alternative current SUFCO Mine coal truck traffic would continue to occur along SR-10 to coal destinations in Emery and Carbon Counties. This alternative does not, when compared to alternatives B, C, D, allow for a reduction in SUFCO Mine coal truck traffic from Fremont Junction on I-70 north along SR-10 to the three possible intersections (**Figure 1-2**) of the proposed Quitchupah Creek coal road with SR-10. In response to this, UDOT Region 4 installed a 3.5 inch pavement overlay to handle the increase in truck traffic from the SUFCO Mine along the first 10.1 miles of SR-10. This upgrade should help to avoid premature fatigue under the No Action alternative in order to accommodate the production associated with the recently signed SUFCO Mine/Pacificorp contract.

Under the No Action alternative SUFCO would not have an alternate means of transporting coal to destinations east of the mine (e.g. Hunter Power Plant and the rail loadout near Price). This alternative would not provide for an alternate coal transport route during any road closures on I-70 (weather, accidents), if a problem were to occur on the existing Acord Lakes road out of the mine, or in the event of an emergency at the mine.

QUITCHUPAH CREEK ROAD ALIGNMENT - ALTERNATIVE B

Alternative B involves upgrading the existing road in Quitchupah Creek. The projected construction cost is $5.5 million. The distance upgraded would be 8.9 miles and the round-trip route from the SUFCO Mine to destinations in Emery and Carbon Counties would be reduced by 55.4 miles or 44 percent of the round-trip to the Hunter Power Plant.

In addition, the projected cost to construct the junction with SR-10 is $2.0 million. This includes widening of the bridge over Quitchupah Creek and the long acceleration lane, as well as the necessary turn lanes. These construction costs would be the responsibility of the SSD; future maintenance would be UDOT's responsibility.

Fuel

The shorter transport route also means fuel savings as indicated in **Table 3.15-6**.

Table 3.15-6 Annual Estimated Fuel Conservation Under Alternative B

Coal Transported per Year		Reduction in Fuel Required		
Year	Tons	Number of Trips	Consumed Fuel Gallons	Gallons Conserved as Compared to No Action
2001	2,000,000	52,632	865,503	584,800
2002	3,000,000	78,947	1,298,239	877,188
2003 or max	5,500,000	144,737	2,380,120	1,608,188
Assumptions: Reduction in round trip of 50 miles, 38 tons of coal per trip, 4.5 miles per gallon, 11.1 gallons saved per trip.				

A typical truck transporting coal with double trailers holds 38 tons of coal. The actual fuel mileage of coal trucks varies upon a number of factors such as cargo weight, road grade, and route. An average fuel mileage of 4.5 miles per gallon was assumed based upon conversations with officials in the trucking industry. The projected savings in fuel consumption, as compared to the No Action Alternative, are listed in **Table 3.15-7**. At 5.5 million tons per year, the projected saving in diesel fuel would be 1,608,188 gallons. Savings to fuel consumption and other transport costs under Alternative B as compared to the No Action Alternative would be substantial.

The value of the proposed Quitchupah Creek Road to the SUFCO Mine is measured in the reduction in transport costs and the reduced effort to haul coal. The 55.4 miles saved in travel means the round trip from the SUFCO Mine to the Hunter Generating Power Plant is from 124 miles round trip to 69 miles round trip. This would save about 75 minutes on the round trip. The reduction in mileage would save about 10 percent of the market value of a ton of coal, thus potentially increasing profits by 10 percent. The 10 percent savings for an annual transport of 2-

4.5 mmtpy means a considerable cost advantage for the coal producer.

The round trip distance to Hunter Power Generating Plant from the SUFCO Mine is 124 miles, at a cost $0.07/mile/ton the cost for transporting one ton is $4.34 (62 x $0.07 = $4.34). The average price for coal in 2001 was $17.54 per ton (Utah Energy Office, 2001), so the $4.34 transport costs represents 25 percent of the value of a ton of coal in 2001. The proposed Quitchupah Creek Road would reduce the round trip haul distance by 55.4 miles or by 44 percent, and the cost to transport one ton would be reduced by $1.75 or 10 percent of the value of the ton of coal. The SUFCO Mine could save between $4 and 10.8 million annually on transport costs under Alternative B, depending upon tonnage transported.

Table 3.15-7 Annual Coal Transport Cost Savings

Year	Eastern[1] Markets mmtpy	No. of[2] Trips per year	Alternative[3] A savings per trip $0.00	Alternative[4] B savings per trip $75.25	Alternative[5] C savings per trip $79.76	Alternative[6] D savings per trip $63.21
2001	2.0	52,632	$0.00	$3,960,558	$4,197,283	$4,016,927
2002	2.5	65,190	$0.00	$4,950,698	$5,247,410	$4,158,586
2003 or max.	5.5	144,737	$0.00	$10,891,459	$11,544,223	$9,148,825

1. 1.0 mmtpy to Savage Loadout + 1.0 mmtpy to Hunter Plant in 2001, 3.1 mmtpy in 2002, 4.5 mmtpy or maximum in 2003
2. Mmtpy divided by 38 ton standard haul load
3. 0 miles less travel x $3.01/load/mile savings (based on industry cost of $0.07/ton/mile) = $0.00
4. 25.0 miles less travel loaded x $3.01/load/mile = $75.25 savings per load
5. 26.5 miles less travel loaded x $3.01/load/mile = $79.76 savings per load
6. 21.0 miles less travel loaded x $3.01/load/mile = $63.21 savings per load

The Quitchupah Road would reduce the burden of transport so the SUFCO Mine could increase profits and remain competitive in the coal industry. Increased profits mean increased capital for exploration of adjacent coal fields to maintain reserves for mine longevity and increased coal resource recovery.

The reduced cost of transporting coal via the proposed Quitchupah Creek Road translates into several opportunities for the SUFCO Mine:

1. The opportunity to remain competitive in a limited coal market.
2. The opportunity to increase profits and attract investors to fund an adequate capital budget.
3. The opportunity to continue to expand coal production and exploration to increase reserves.

The long-term stability of the SUFCO Mine ensures that one-quarter of the Sevier County payroll would continue and one-fifth of the workers would remain employed.

The construction and operation of a public highway in Quitchupah Creek would shorten the commute route from Emery County to the SUFCO Mine by over 50 miles. Emery County has a resource of unemployed experienced coal miners that could benefit from an easier commute to work. Currently 27 miners from Emery County work at the SUFCO Mine. The travel distance from the SUFCO Mine to the Town of Emery would be 12 miles, to Ferron 27 miles, Castledale 34 miles, and Huntington 43 miles. Currently the nearest town to the SUFCO Mine is Salina in

Sevier County at a travel distance of 29 miles. With the proposed Quitchupah Creek Road, Emery would be much closer than Salina, the traditional base for the SUFCO Mine.

An economic electrical cost benefit would also accrue, in time, to the electrical energy consuming public and industry. This is achieved through the following means:
The coal company passes the savings on to the power station. The savings is passed on because the company operates in a very competitive energy market segment.

The generating station passes the savings on to the electrical energy consumer. The power companies operate in a regulated environment with a maximum/minimum return on investment or in an open market environment which reacts very quickly to electrical supply and demand forces.

In addition, the decreased transportation cost would allow the SUFCO Mine to recover more of the coal resource and increase the overall recovery. SUFCO Mine personnel have projected up to 11 million additional tons of coal could be recovered if the Quitchupah Creek Road were built, adding some 1.3 years to the life of the mine. These 11 million tons could provide for the electrical needs of some 1.7 million average residential customers for the 1.3 years. This is an energy resource that would otherwise be lost because it would be uneconomic to recover.

Transportation
Under Alternative B, savings in highway maintenance costs would occur on SR-10, as compared to the No Action alternative. Again, the first 10.1 mile segment of SR-10 is of concern since all impacts to the highway north of that point are common to all alternatives. The first 8.5 miles of this segment of SR-10 north from I-70 would require a 2" overlay up to the Alternative B junction with SR-10. The remaining 1.6 miles would require a 3.5" overlay. These saving figures, compared to the No Action alternative, are shown below.

Alternative B:	8.5 miles of 2" overlay @ $90,909/mile =	$772,727
	1.6 miles of 3.5" overlay @ $181,181/mile =	$290,909
	Total Cost =	$1,063,656
No Action:	10.1 miles of 3.5" overlay @ $181,181/mile =	$1,836,362
Alternative B savings compared to the No Action alternative =		$772,72

In addition, there would be costs of approximately $600,000 to install a passing lane on Quitchupah Hill (Scott Goodwin, UDOT, Region 4).

This alternative would eliminate the probability of traffic collisions with SUFCO coal trucks traveling east on I-70 and on the first 8.5 miles of SR-10.

Under this alternative, the commuting distance from communities to the east of the SUFCO Mine would decrease for vendors traveling to the mine and for Carbon and Emery County residents employed at the mine (5 and 27 respectively).

Agriculture
Alternative B is estimated to reduce available forage by 8 AUMs during road construction. Upon reclamation, the final net loss of forage is estimated to be 4 AUMs. This loss represents an insignificant economic impact to the livestock industry in the Study Area. The corrals/holding pens would be constructed as part of this alternative. Livestock trailing would continue as present, with the addition of fenced trail above the Forest Service boundary.

ALTERNATE JUNCTION AND ALTERNATE DESIGN - ALTERNATIVE C

Alternative C diverges from the existing Quitchupah Creek Road about 2 miles west of SR-10 and proceeds east to intercept SR-10, approximately 10.1 miles north of the I-70/SR-10 junction (i.e. a point 1.6 miles north of the proposed Quitchupah Creek road junction with SR-10 described under Alternative B). The total round-trip distance saved in transporting coal from the SUFCO Mine to destinations in Emery and Carbon Counties would be 58 miles or 47 percent of the round-trip to the Hunter Power Plant. The projected construction cost is $5.9 million.

In addition, the projected cost to construct the junction with SR-10 is $0.8 million and includes the addition of turn lanes. These construction costs would be the responsibility of the SSD; future maintenance would be UDOT's responsibility.

Fuel
The shorter transport route also means fuel savings as indicated in **Table 3.15-8**.

Table 3.15-8 Annual Estimated Fuel Conservation Under Alternative C

Coal Transported per Year		Reduction in Fuel Required		
Year	Tons	Number of Trips	Consumed Fuel Gallons	Gallons Conserved as Compared to No Action
2001	2,000,000	52,632	830,416	619,888
2002	3,000,000	78,947	1,245,608	929,820
2003 or max.	5,500,000	144,737	2,283,628	1,704,608
Assumptions: Reduction in round trip of 53 miles, 38 tons of coal per trip, 4.5 miles per gallon, 11.8 gallons saved per trip.				

The projected savings in fuel consumption, over the No Action Alternative, are listed in **Table 3.15-8**. At 5.5 million tons per year, the projected saving in diesel fuel would be 1,704,608 gallons. Savings to fuel consumption and other hauling costs under Alternative C as compared to the No Action Alternative would result in a substantial competitive advantage to the SUFCO Mine.

Costs
The cost savings are similar to those described under Alternative B. For Alternative C, the cost advantage would increase to 10.5 percent. The total transport cost savings annually for the SUFCO Mine would range from $4 to $11 million depending upon tonnage transported.

The dispersed type of recreational activity that is presently enjoyed in Quitchupah Creek would be impacted by traffic and associated noise from the proposed road. However, opportunities for increased passenger vehicle access would occur under this alternative. Additionally, the sense of solitude in the canyon would experience negative impacts caused by increased traffic, noise, and

access. These represent changes to the lifestyles of individuals presently using the canyon for these purposes.

Transportation
Under Alternative C, savings in highway maintenance costs would occur on SR-10, as compared to the No Action alternative. Again, the first 10.1 mile segment of SR-10 is examined since all impacts to the highway north of that point are common to all alternatives. The entire 10.1 miles of this segment of SR-10 north from I-70 would require a 2" overlay up to the Alternative C junction with SR-10. There would be no 3.5" overlay needed on this segment. These saving figures, compared to the No Action alternative, are shown below.

Alternative C:	10.1 miles of 2" overlay @ $90,909/mile =	$918,181
	0 miles of 3.5" overlay @ $181,181/mile =	$0
	Total Cost =	$918,181
No Action:	10.1 miles of 3.5" overlay @ $181,181/mile =	$1,836,362
	Alternative C savings compared to the No Action alternative =	$918,181

Additionally, by locating the entrance of the proposed road onto SR-10 approximately 1.6 miles north of that proposed for Alternative B, costs of $600,000 for a passing lane on Quitchupah Hill would be avoided (Scott Goodwin, UDOT, Region 4).

This alternative would eliminate the probability of traffic collisions with SUFCO coal trucks traveling east on I-70 and on the first 10.1 miles on SR-10.

Under this alternative the commuting distance from communities to the east of the SUFCO Mine would decrease for vendors traveling to the mine and for Carbon and Emery County residents employed at the mine.

Agriculture
Alternative C is estimated to impact the same amount of land and forage as Alternative B. The corrals/holding pens would be constructed as part of this alternative. Livestock trailing would continue as present, with the addition of the fenced trail above the Forest Service boundary.

WATER HOLLOW ALTERNATE ALIGNMENT - ALTERNATIVE D
Alternative D follows Quitchupah Creek for 2 miles from the Acord Lakes Road, then follows and crosses Water Hollow south to Water Hollow Benches and Saleratus Benches. The route then turns north to connect with SR-10 at a point about 6.2 miles north of the SR-10 intersection with I-70. The round-trip distance saved would be 46.7 miles or 34 percent of the round-trip from the SUFCO mine to the Hunter Power Plant. The projected construction cost is $13.5 million.

In addition, the projected cost to construct the junction with SR-10 is $0.9 million and includes the addition of turn lanes. These construction costs would be the responsibility of the SSD; future maintenance would be UDOT's responsibility.

Fuel
The shorter transport route also means fuel savings as indicated in **Table 3.15-9**.

Table 3.15-9 Annual Estimated Fuel Conservation Under Alternative D

Coal Hauled per Year		Reduction in Fuel Required		
Year	Tons	Number of Trips	Consumed Fuel Gallons	Gallons Conserved as Compared to No Action
2001	2,000,000	52,632	959,072	491,232
2002	3,000,000	78,947	736,839	736,839
2003 or max.	5,500,000	144,737	2,637,429	1,350,879
Assumptions: Reduction in round trip of 42 miles, 38 tons of coal per trip, 4.5 miles per gallon, 9.33 gallons saved per haul.				

The projected fuel savings to SUFCO, compared to the No Action Alternative, are listed in **Table 3.15-9**. At 5.5 million tons per year, the projected saving in diesel fuel would be 1,350,879 gallons. Savings to fuel consumption and other transport costs under Alternative D as compared to the No Action Alternative would result in a substantial competitive advantage to the SUFCO Mine.

Costs
The cost savings are similar to those described in Alternatives B and C.

Transportation
Under Alternative D, savings in highway maintenance costs would occur on SR-10, as compared to the No Action alternative. Again, the first 10.1 mile segment of SR-10 is examined since all impacts to the highway north of that point are common to all alternatives. The first 6.2 miles of this segment of SR-10 north from I-70 would require a 2" overlay up to the Alternative D junction with SR-10. The remaining 3.9 miles would require a 3.5" overlay. These savings figures, compared to the No Action alternative, are shown below.

Alternative D:	6.2 miles of 2" overlay @ $90,909/mile =	$563,636
	3.9 miles of 3.5" overlay @ $181,181/mile =	$709,090
	Total Cost =	$1,272,726
No Action:	10.1 miles of 3.5" overlay @ $181,181/mile =	$1,836,362
Alternative D savings compared to the No Action alternative =		$563,636

In addition, there would be costs of approximately $600,000 to install a passing lane on Quitchupah Hill. (Scott Goodwin, UDOT, Region 4).

This alternative would eliminate the probability of traffic collisions with SUFCO coal trucks traveling east on I-70 and on the first 6.2 miles on SR-10.

Under this alternative the commuting distance from communities to the east of the SUFCO Mine would decrease for vendors traveling to the mine and for Carbon and Emery County residents employed at the mine.

Agriculture
Under Alternative D, there would be an initial loss of 12 AUMs and after reclamation a minimal loss of 5 AUMs. Livestock trailing would continue as present with the addition of the fenced trail

above the Forest Service boundary.

MITIGATION AND MONITORING

No Action Alternative:
No mitigation would be necessary.

Alternatives B, C, D:
The fenced trail would minimize costs due to livestock-road collisions.

Alternative D:
No mitigation is planned.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NO ACTION ALTERNATIVE

The existing SUFCO fuel consumption and associated costs to truck coal via the existing routes on Acord Lakes/I-70/SR-10 would continue. As compared to the build alternatives (B, C, D), the difference in fuel consumption would be irreversibly and irretrievably lost under the No Action alternative.

Alternatives B, C, D
The solitude, recreation opportunities, and overall remote character of Quitchupah Creek canyon would be irretrievably lost to those individuals using the canyon for those purposes.

The loss of AUMs would be irretrievably lost with construction of a road through the canyon.

CUMULATIVE EFFECTS

The SUFCO Mine may continue to increase coal production due to an expanding market for coal-fired electrical generation regardless of the alternative selected. This could lead to other coal tracts being leased and mined, in addition to the Muddy tract. Coal-fired electrical generation plants in the Midwest and east have an increased need for low-sulfur, high-btu coal to meet the requirements of the Clean Air Act, generating another eastern market for Utah coal.

The transport of coal from the CONSOL Mine in Emery County would combine with the coal truck traffic from the SUFCO Mine to increase coal truck traffic on SR-10 and through the towns of Emery, Ferron, Clawson, and Castledale. This may lead to increased spending on SR-10 to maintain the highway, as well as increased noise and traffic hazards for this stretch of SR-10. The increased coal production would also increase revenues and subsequent expenditures in Carbon, Emery, and Sevier Counties.